



The Oceans Below
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Curriculum Area	Science
Subject Area	Earth Science/Oceanography
Grade Level	5 th grade
Learning Objectives	<ul style="list-style-type: none"> • The student will investigate the geological characteristics of the ocean environment. • The student will create a drawing of the geography of the ocean floor with appropriate labels.
Correlation to the SOL	Science 5.6 C/T 5.3, 5.4
Video/Technology Hardware/Software Needed	<p>For class: Multimedia computer with Internet connection Computer Projector System Drawing software (such as <i>ClarisWorks</i> or <i>KidPix</i>) TV/Monitor and VCR</p> <p>For each student: Computer connected to color printer Drawing software (such as <i>ClarisWorks</i> or <i>KidPix</i>)</p> <p>Other: Selected video, CD-ROMs, and Web sites from Technology Resources for the Ocean Floor</p>
Materials Required	<p>For each student: A copy of the Kid Pix Directions for the Ocean Floor (also see example of finished product)</p>
Procedures/Activities	<ol style="list-style-type: none"> 1. Present information and pictures about the ocean floor from several of the selected resources. Review with students any unfamiliar terms. 2. Hand out KidPix Directions for the Ocean Floor. Ask students to follow the directions to create a picture of the ocean floor. 3. Students turn in their drawings to be graded.

Content Assessment	The finished <i>KidPix</i> drawing is evaluated.
Technology Integration Assessment	Teacher observes the student use of the software to create their picture.
Extensions	<p>See the attachment Technology Resources for the Ocean Floor for suggested ideas to extend this lesson in the subject areas of ocean environment and ecology, etc.</p> <p>Language Arts: Students create a report about the development of the ocean floor from the early days of the planet to present time.</p> <p>Math: Have students create a graph using the graphing activity at http://atozteacherstuff.com/lessons/ocean.shtml or using other resources.</p>

Technology Resources for the Ocean Floor

Instructional Video

Bill Nye #404 *Ocean Exploration* (ITV, 30 min, grades 3-8)

Ocean Quest (ITV, grades 4-8, 60 min programs)

- **Program #1 *Oceans: What are They?*** Explores the physical ocean
- **Program #2 *Exploring the Ocean Floor*** Explores physical characteristics of the ocean floor.
- **Programs #3-8** for extensions on ocean life, problems, resources

3-2-1 Classroom Contact #17 *Ocean Environments: The 3D Sea* (ITV, grades 4-6, 30 minutes)

Secrets of the Ocean Realm (PBS) Extension

Eyewitness Ocean (DK) Extension

National Geographic Really Wild Animals: *Deep Sea Dive*

CD-ROMS

The Magic School Bus Explores the Ocean Floor (Microsoft)

Lots of exploration of sea life and habitats, but hard to navigate for instructional purposes.

Whales presented by the National Geographic Society (Discis)

Great CD for the low reader. Text is simple, yet thorough on the subject, and can be read aloud.

The Great Ocean Rescue (Tom Snyder)

This cooperative learning CD-ROM package includes investigation of marine ecosystems, earth and environmental science. Also contains a library of over 85 short movies and stills, each tied to a comprehensive lesson plan in the Teacher's Guide.

The Oceans Below (Amazing Media)

Scuba dive to 17 sites around the world and explore the creatures of the sea while learning about scuba diving. See student activity sheet. Use for extensions.

Web Sites

UCMP Glossary of Natural History Terms, Vol. #2 Geological Terms

<http://www.ucmp.berkeley.edu/glossary/gloss2geol.html>

Easy to read, simple glossary.

The Ocean Floor – Science

<http://atozteacherstuff.com/lessons/ocean.shtml>

Directions to make a paper mache ocean floor in a shoe box with follow-up graphing activity

A to Z Teacher Stuff: Ocean Theme

<http://atozteacherstuff.com/themes/ocean.shtml>

Thematic units, lesson plans, worksheets, and resources for a theme on the ocean or the sea, all grade levels

Scientific American: Panoramas of the Seafloor

<http://www.sciam.com/0697issue/0697pratson.html>

Pretty scientific for 5th grade, but has some great pictures for teacher-guided instruction.

Monterey Bay Aquarium: E-Q Features-Glossary

http://www.mbayaq.org/efc/efc_eqf/eqf_glossary.asp

A great resource for the glossary alone, but don't stop there. Click the Habitats Path to explore various ocean habitats from the kelp forest to the open ocean, or click on one of the FAQs features such as the Deep Sea to find a plethora of stories and images.

Kirk Coleman's Grade 7 Earth Science Page

http://www.sd68.bc.ca/plvl/highway/GR7_31.HTM

Compare and contrast the sea floor and the land

Oceans Alive: The Water Planet: Physical Features of the Ocean

<http://www.mos.org/oceans/planet/features.html>

A detailed site with an excellent 3-D illustration of the ocean floor, links to pages about Pangea and continental drift as well as the water cycle and volcanoes.

Kid Pix Directions for The Ocean Floor

1. Prepare the document:

- Open a *Kid Pix* document.
- Holding the **option** key down, click on the **A** from the **tool bar**.
- Select a small font and a **color**. Click near the top. Type:
• *The Ocean Floor by (your name)*

2. Illustrate the ocean floor:

- Using the line tool in a blue, hold the shift key down and draw a line across the page about one third of the way from the top of the page. This is sea level.
- Using the pencil tool and another color, sketch the ocean floor starting on one end above the water line. Include the following:
 - continental shelf
 - shore
 - continental slope
 - continental rise
 - trench
 - abyssal plain
 - mid-ocean ridge
 - island
 - volcano
- Make sure the volcano and island features rise above sea level.
- Fill the land and water with a color and perhaps a pattern.
- Leave the sky white.

3. Label the ocean floor features:

- Holding the **option** key down, click on the **A** from the tool bar.
- Select the smallest font and black color.
- Type the parts of the ocean floor over their features above sea level. Stagger their height so they won't run into each other.
- Select the line tool. Draw a line from the labels to the features. Holding the **shift** key down while dragging will provide a perpendicular line. Do not cross lines!

4. Save:

- Under **File** select **Save As...**
- Insert a disk.
- Type: *Ocean Floor*.
- Select **Save**.

5. Print:

- Under **File** select **Print**.
- Select **Print**.

The Ocean Floor by Sarah Irons

